

# PATENT COOPERATION TREATY


## PCT

### INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

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Applicant's or agent's file reference P600421PCT1		<b>FOR FURTHER ACTION</b>		See Form PCT/PEA/416
International application No. PCT/NL2004/000696		International filing date (day/month/year) 04.10.2004	Priority date (day/month/year) 02.10.2003	
International Patent Classification (IPC) or national classification and IPC A23G9/02				
Applicant CAMPINA, B.V.				
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau a total of 5 sheets, as follows:</p> <p style="margin-left: 20px;"><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p style="margin-left: 20px;"><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>				
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>				
Date of submission of the demand  02.08.2005		Date of completion of this report  25.01.2006		
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016		Authorized Officer  Boddaert, P  Telephone No. +31 70 340-3471		



INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITYInternational application No.  
PCT/NL2004/000696**10/574063****Box No. I Basis of the report**

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
  - ☐ publication of the international application (under Rule 12.4)
  - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements\*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

**Description, Pages**

1-18 as originally filed

**Claims, Numbers**

1-44 received on 02.08.2005 with letter of 02.08.2005

**Drawings, Sheets**

1/2, 2/2 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

\* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
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**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	11,20-26,33-36,38
	No: Claims	1-10,12-19,27-32,37,39-44
Inventive step (IS)	Yes: Claims	
	No: Claims	1-44
Industrial applicability (IA)	Yes: Claims	1-44
	No: Claims	

2. Citations and explanations (Rule 70.7):

**see separate sheet**

**Re Item V**

Reference is made to the following documents :

D1 : US4127679

D2 : US6497913

D3 : EP1348341

D4 : US6596333

D5 : Journal of Dairy Science , 1997 , vol.80 , nr. 10 , p.2631-2638 (XP8030810)

**Remark :**

a. Although claims 1,27,32 and 37,41 have been drafted as separate independent claims, they appear to relate effectively to the same subject-matter and to differ from each other only with regard to the definition of the subject-matter for which protection is sought and/or in respect of the terminology used for the features of that subject-matter. The aforementioned claims therefore lack conciseness and as such do not meet the requirements of Article 6 PCT.

b. Claims 1-44 relate to a product , use and method defined by reference to a freezing point parameter. it is difficult to compare what is set out in the present application with what is set out in the prior art.

It is true that documents D1-D5 (all disclosing different compositions) do not specifically disclose whether or not the blends , mixes and ice creams fall within the parameter specified in the claims.

However , this does not automatically mean that the blends , mixes and ice creams disclosed in documents D1-D5 , with their specific compositions , do not fall within the scope of claim 1 (freezing point of  $-3.5^{\circ}\text{C}$  or lower), and hence there is a novelty problem.

No evidence is available (f.i. comparative testing) to prove that there is a real difference.

1. The present application does not meet the requirements of Article 33(2) PCT because the subject-matter of claims 1-10,12-19,27-32,37,39-44 is not new.

Remark : the applicant states that a 'blend' is a non-frozen composition of ingredients suitable for preparing ice cream. Claims 32-36 all refer to a blend (suitable for preparing ice cream) comprising unsaturated emulsifier , fat , sugar , stabiliser and milk solids non fat (as only technical features , and to which other ingredients could be added). Indeed ,

any document disclosing a composition comprising these components as technical features represents therefore a lack of novelty for the corresponding claim.

a. Document D1 discloses (col.2 l.6 - col.3 l.52 ; examples , claims) a composition for the preparation of ice cream comprising unsaturated emulsifier , fat , sugar , stabilizer and milk solids non-fat. An ice cream mix and a resulting ice cream (considered intrinsically having a freezing point of  $-3.5^{\circ}\text{C}$  or lower) comprising between 0.2 - 0.35% (w/w) of unsaturated emulsifier.

The subject-matter of claims 1-9,27-32,37,39,40 is therefore not new.

b. Document D2 discloses (col. 6,7 , examples , claims) a composition for the preparation of ice cream comprising unsaturated emulsifier , fat , sugar , stabilizer and milk solids non-fat. An ice cream mix and a resulting ice cream (considered intrinsically having a freezing point of  $-3.5^{\circ}\text{C}$  or lower) comprising up to 1% of an unsaturated monoglyceride emulsifier , resulting in stabilized small gas cell size.

The subject-matter of claims 1-10,12-19,27-32,37,39-44 is therefore not new.

c. Document D3 discloses (par. 22 , examples , calims) a composition suitable for the preparation of ice cream comprising unsaturated mono-/di-glyceride emulsifier , fat , sugar , stabilizer and milk solids non-fat. An ice cream mix and a resulting ice cream (considered intrinsically having a freezing point of  $-3.5^{\circ}\text{C}$  or lower) comprising between 0.2 - 1.5% (w/w) of unsaturated emulsifier.

The subject-matter of claims 1-9,27-32,37,39,40 is therefore not new.

d. Document D4 discloses a composition for the preparation of ice cream comprising unsaturated emulsifier , fat , sugar , stabilizer and milk solids non-fat. An ice cream mix and a resulting ice cream (considered intrinsically having a freezing point of  $-3.5^{\circ}\text{C}$  or lower ) comprising between 0.2 - 0.35% (w/w) of unsaturated monoglyceride emulsifier , resulting in a product with improved shrinkage resistance and a stable air cell size even after storage or heat shock.

The subject-matter of claims 1-9,27-32,37,39,41-44 is therefore not new.

e. Document D5 discloses (p.2634-2637 , figure 5,6) a composition for the preparation of ice cream comprising unsaturated emulsifier (0.5%) , fat , sugar , stabilizer and milk solids non-fat. An ice cream mix and a resulting ice cream comprising the unsaturated emulsifier (0.5%) and the use of unsaturated emulsifier for an improved microstructure and improved small air cell stability in ice cream.

**INTERNATIONAL PRELIMINARY  
REPORT ON PATENTABILITY  
(SEPARATE SHEET)**

International application No.

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The subject-matter of claims 1-9,27-32,37,39-44 is therefore not new.

2. Dependent claims 11,20-26,33-36,38 do not contain any features which , in combination with the features of any claim to which they refer , meet the requirements of the PCT in respect of inventive step (Article 33(3) PCT) , because in these claims a slight change is defined which comes within the scope of the customary practice followed by persons skilled in the art , especially as the advantages thus achieved can readily be foreseen.

AMENDED CLAIMS

1. Ice cream prepared by freezing an ice cream mix having a freezing point of  $-3.5^{\circ}\text{C}$  or lower, comprising at least 0.2% (w/w) unsaturated emulsifier.
- 5 2. Ice cream according to claim 1, comprising at least 0.25% (w/w) unsaturated emulsifier.
- 10 3. Ice cream according to claim 2, comprising at least 0.3% (w/w) unsaturated emulsifier.
- 8 4. Ice cream according to any of the preceding claims, comprising at most 1.0% (w/w) unsaturated emulsifier.
- 15 5. Ice cream according to any of the preceding claims, comprising at most 0.75% (w/w) unsaturated emulsifier.
- 20 6. Ice cream according to any of the preceding claims, comprising at most 0.5% (w/w) unsaturated emulsifier.
7. Ice cream according to any of the preceding claims, wherein the unsaturated emulsifier comprises unsaturated glyceride, preferably unsaturated monoglyceride, diglyceride or mixtures thereof.
- 25 8. Ice cream according to claim 7, wherein the unsaturated emulsifier comprises, on weight basis, at least 50%, preferably at least 60%, more preferably at least 80%, even more preferably at least 90% and most preferably 100% unsaturated monoglyceride.
- 30 9. Ice cream according to any of the preceding claims, wherein the amount, on weight basis, of unsaturated emulsifier calculated on the total weight of emulsifier in the ice cream, is more than 20 w/w%, preferably more than 25, 40, 60, 80 w/w%, and most preferably more than 95 w/w%.
- 35 10. Ice cream according to any of the preceding claims comprising 5-30% (w/w) sugar, the sugar being selected as to achieve a freezing point of the ice cream mix of  $-3.5^{\circ}\text{C}$  or lower.

11. Ice cream according to claim 10, wherein the sugar comprises at least 50% (w/w) monosaccharides.
12. Ice cream according to claims 10 or 11, wherein the sugar is  
5 chosen from the group, consisting of lactose, sucrose, galactose, glucose, glucose syrup and dextrose or a combination of two or more thereof.
13. Ice cream according to any of the preceding claims comprising  
10 1-18% (w/w) fat, 4-16% (w/w) milk solids non-fat and 0.1-0.5% (w/w) stabilisers.
14. Ice cream according to claim 13, comprising 0.2-0.4w/w%,  
preferably 0.3 w/w% stabiliser.  
15
15. Ice cream according to any of the preceding claims, wherein the fat in ice cream is, on weight basis, at least 50%, preferably at least 60%, more preferably at least 75% and most preferably 100% vegetable fat.  
20
16. Ice cream according to claim 15, wherein the vegetable fat is chosen from palm fat, palm kernel fat or coconut fat or a combination thereof.
- 25 17. Ice cream according to claim 16, comprising palm kernel fat and/or coconut fat, wherein the ratio between palm kernel fat and coconut fat is 0:100 - 100:0, preferably 20:80 - 80:20, more preferably 40:60 - 60:40, and most preferably 50:50.
- 30 18. Ice cream according to any of the preceding claims, comprising less than 0.5 w/w% stabilisers.
19. Ice cream according to claim 18, the stabiliser being present in the range of 0.05-0.50, preferably 0.10-0.40 and most  
35 preferably 0.15-0.25 w/w%.
20. Ice cream according to any of the preceding claims, comprising one or more stabilisers, chosen from the group, consisting of guar, locust bean gum and carrageenan.  
40



21. Ice cream according to any of the preceding claims, comprising 0.01-0.15, preferably 0.05-0.10 and most preferably 0.06-0.08 w/w% guar gum.
- 5 22. Ice cream according to any of the preceding claims, comprising 0.01-0.15, preferably 0.01-0.10 and most preferably 0.06-0.08 w/w% locust bean gum.
23. Ice cream according to any of the preceding claims, comprising  
10 0.01-0.10 %, preferably 0.02-0.07 and most preferably 0.03-0.06 w/w% carrageenan.
24. Ice cream according to any of the preceding claims, comprising  
15 5-10% (w/w) of a hydrolysed lactose preparation, 2-8% (w/w) sucrose and 10-22% (w/w) dextrose.
25. Ice cream according to any of the preceding claims, characterised in that it is packaged in a squeezable container.  
20
26. Ice cream according to any of the preceding claims, characterised in that it is packaged in an aerosol.
27. Ice cream mix having a freezing point of  $-3.5^{\circ}\text{C}$  or lower,  
25 comprising at least 0.2% (w/w) unsaturated emulsifier.
28. Ice cream mix according to claim 27, comprising at least 0.25% (w/w) unsaturated emulsifier.
- 30 29. Ice cream mix according claims 26 or 27, further comprising fat, milk solids non-fat, sugar and stabiliser.
30. Ice cream mix according to any of claims 27-29 having a freezing point of  $-4^{\circ}\text{C}$  or lower.  
35
31. Ice cream mix according to any of claims 27-30 having a freezing point of  $-4.5^{\circ}\text{C}$  or lower.

32. Blend for preparing ice cream according to any of the claims 1-26 comprising unsaturated emulsifier, fat, sugar, stabilisers and milk solids non-fat.
- 5 33. Blend according to claim 32 comprising 5-50% (w/w) unsaturated emulsifier, 5-60% (w/w) fat, 7-15% (w/w) sugar, 3-30% (w/w) stabilisers and 2-5% (w/w) milk solids non-fat.
- 10 34. Blend according to claim 33, comprising 7-40% (w/w) unsaturated emulsifier and 7-40% (w/w) fat.
35. Blend according to claim 34, comprising 10-35% (w/w) unsaturated emulsifier and 10-35% (w/w) fat.
- 15 36. Blend according to any of the claims 32-35, comprising 5-22 w/w% stabilisers.
- 20 37. Use of the blend according to any of the claims 32-36 for preparing ice cream according to any of the claims 1-27.
38. Use according to claim 19, wherein 1-2% w/w of the blend is incorporated in the ice cream mix.
- 25 39. Process for the preparation of an ice cream according to claims 1-26 comprising the steps of:
- 27-31 ~~10-14~~
- 30 a) preparing an ice cream mix according to any of the claims 27-31 ~~10-14~~
- b) aerating and freezing the mix at a drawing temperature in the range of -8°C to -12°C; and
- c) hardening the ice cream at a temperature in the range of -20°C to -50°C.
40. Process according to claim 39, wherein in step a) an ice cream mix is prepared by combining a water phase and a fat phase, the emulsifier at least partially being incorporated in the fat phase.
- 35 41. Use of unsaturated emulsifier for preventing air cell coarsening in an aerated frozen dessert.

42. Use according to claim 41, said unsaturated emulsifier being present in an amount of at least 0.2% (w/w) in the dessert.
43. Use according to claims 41 or 42 for stabilising air cells in the dessert for at least 2 weeks, preferably least 3, 4, 6 weeks, more preferably at least 4, 6, 10 months and most preferably at least 12 months at a storage temperature of -15 to -30°C.
44. Use according to any of claims 41-43, wherein the dessert is ice cream having a freezing point of -3.5°C or lower.

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